

**What is claimed is:**

1. A method of providing a texture to a surface of a component for use in a semiconductor process chamber, comprising:
  - scanning an electromagnetic beam across the surface of the component for a sufficient period of time to form a plurality of features thereon; and
  - roughening the surface and features of the component.
2. The method of claim 1, wherein scanning comprises a transit time and a dwell time.
3. The method of claim 1, wherein the electromagnetic beam has a power density at a point on the surface of the component upon which the beam is directed in a range of about  $10^4$  W/mm<sup>2</sup> to about  $10^7$  W/mm<sup>2</sup>.
4. The method of claim 1, wherein roughening the surface of the component comprises bead blasting the component.
5. The method of claim 1, wherein roughening the surface of the component comprises chemically roughening the component.
6. The method of claim 1, further comprising heating the component prior to scanning the electromagnetic beam.
7. The method of claim 6, wherein heating the component comprises pre-heating the component to a temperature that is less than a temperature at which the component begins to melt, flow, or undergo substantial decomposition.
8. The method of claim 6, wherein the component is heated using a radiant heat lamp, inductive heater, or an IR type resistive heater.

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9. The method of claim 4, wherein bead blasting is performed using grit particles comprising aluminum oxide, garnet, silicon carbide, silicon oxide or combinations thereof.
10. The method of claim 4, further comprising chemically cleaning the component after bead blasting the component.
11. The method of claim 5, further comprising chemically cleaning the component after chemically roughening the component.
12. The method of claim 1, further comprising chemically cleaning the component after forming the plurality of features thereon.
13. The method of claim 1, further comprising stress relieving the component prior to providing a texture to a surface of the component.
14. The method of claim 1, further comprising stress relieving the component after forming the plurality of features.
15. The method of claim 1, further comprising stress relieving the component prior to providing a texture to a surface and stress relieving the component after forming the plurality of features thereon.
16. The method of claim 4, further comprising stress relieving the component after bead blasting the component.
17. The method of claim 1, wherein the electromagnetic beam is used to form features on a second surface of the component to compensate for any possible distortion caused by forming features on a first surface.
18. A method of providing a texture to a surface of a component, comprising:  
pumping the texturizing chamber to a pressure in a range of about  $10^{-3}$  torr to about  $10^{-5}$  torr;

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scanning an electron beam across the surface of the component at an electron beam current of between about 15 and about 50 milliamperes and an accelerating voltage of between about 50 and about 160 kilovolts to form a plurality of features thereon; and

roughening the surface and features of the component.

19. The method of claim 18, wherein scanning comprises a transit time and a dwell time.

20. The method of claim 18, wherein the electromagnetic beam has a power density at a point on the surface of the component upon which the beam is directed in a range of about  $10^4$  W/mm<sup>2</sup> to about  $10^7$  W/mm<sup>2</sup>.

21. The method of claim 18, wherein roughening the surface of the component comprises bead blasting the component.

22. The method of claim 18, wherein roughening the surface of the component comprises chemically roughening the component.

23. The method of claim 18, further comprising heating the component prior to scanning the electromagnetic beam.

24. The method of claim 23, wherein heating comprises pre-heating the component to a temperature that is less than a temperature at which the component begins to melt, flow, or undergo substantial decomposition.

25. The method of claim 23, wherein the component is heated using a radiant heat lamp, inductive heater, or a IR type resistive heater.

26. The method of claim 21, wherein bead blasting is performed using grit particles comprising aluminum oxide, garnet, silicon carbide, silicon oxide or combinations thereof.

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27. The method of claim 21, further comprising chemically cleaning the component after bead blasting the component.
28. The method of claim 22, further comprising chemically cleaning the component after chemically roughening the component.
29. The method of claim 18, further comprising chemically cleaning the component after forming the plurality of features thereon.
30. The method of claim 18, further comprising stress relieving the component prior to providing a texture to a surface of the component.
31. The method of claim 18, further comprising stress relieving the component after forming the plurality of features.
32. The method of claim 18, further comprising stress relieving the component prior to providing a texture to a surface and stress relieving the component after forming the plurality of features thereon.
33. The method of claim 21, further comprising stress relieving the component after bead blasting the component.
34. The method of claim 18, wherein the electromagnetic beam is used to form features on a second surfaces of the component to compensate for any possible distortion caused by forming features on a first surface.
35. A process chamber component for use in a process chamber, comprising:
  - a body having one or more surfaces; and
  - a plurality of features formed on the surfaces, wherein the features have been formed by scanning a beam of electromagnetic energy across a surface of the process chamber component, and wherein the features that are formed are

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selected from the group consisting of depressions, protuberances, and combinations thereof.

36. The process chamber component of claim 35, wherein the process chamber component is selected from the group of a chamber shield, a target, a shadow ring, a deposition collimator, a deposition ring, a contact ring, a coil, a coil support, an alignment ring, a shutter disk, and a substrate support.

37. The process chamber component of claim 35, wherein the surfaces further comprise a bead blasting treatment.

38. The process chamber component of claim 35, wherein the process chamber component is made of a material selected from the group of steel, stainless steel, iron-nickel-chromium alloys, nickel-chromium-molybdenum-tungsten alloys, chromium copper alloys, copper zinc alloys, nickel, titanium, tantalum, tungsten, copper, aluminum, silicon carbide, sapphire, aluminum oxide, aluminum nitride, silicon oxide, quartz, Polyimide, PolyArylate, PolyEtherEtherKetone, and combinations thereof.

39. The process chamber component of claim 35, wherein the density of features on the surfaces is between about 1 and about 300 features per square centimeter.

40. The process chamber component of claim 35, wherein the surfaces are chemically roughened after the plurality of features are formed thereon.

41. The process chamber component of claim 37, wherein the surfaces are chemically cleaned after bead blasting the process chamber component.

42. The process chamber component of claim 40, wherein the surfaces are chemically cleaned after chemically roughening the process chamber component.

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43. The process chamber component of claim 35, wherein the surfaces are chemically cleaned after forming the plurality of features thereon.
44. The process chamber component of claim 35, wherein the component is stress relieved prior to scanning the electromagnetic beam across the surface of the process chamber component.
45. The process chamber component of claim 35, wherein the component is brought to a pre-heat temperature prior to step scanning the electromagnetic beam.
46. The process chamber component of claim 45, wherein the pre-heat temperature is less than a temperature at which the process chamber component begins to melt, flow, or undergo substantial decomposition.
47. The process chamber component of claim 45, wherein the component is stress relieved prior to heating to a preheat temperature.
48. The process chamber component of claim 35, wherein the component is stress relieved after forming the plurality of features.
49. The process chamber component of claim 35, wherein the component is stress relieved prior to providing a texture to a surface and after forming the plurality of features on said surface.
50. The process chamber component of claim 45, wherein the component is stress relieved after forming the plurality of features.
51. The process chamber component of claim 45, wherein the process chamber component is heated using a radiant heat lamp, inductive heater, or an IR type resistive heater.

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52. The process chamber component of claim 35, wherein the component has features formed on a first and a second surface, wherein the features on the second surface compensate for the induced stress of forming features on the first surface.

53. The method of claim 18, wherein the power density at a point on the surface of the component is in a range of about  $10^4$  to about  $10^5$  W/mm<sup>2</sup>.

54. The method of claim 5, wherein chemically roughening the surface comprises electrochemically roughening the surface.

55. The method of claim 22, wherein chemically roughening the surface comprises electrochemically roughening the surface.

56. The process chamber component of claim 40, wherein the surfaces are electrochemically roughened.